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ABSTRACT

A user's guide for the McGill Evaluation System of instructional evaluation and a bibliography are presented. The guide covers the initial planning of an evaluation, data collection, and making changes in a course or program. The procedure used in the system contains the following sequential steps: describing the purpose of the evaluation, deciding the aspects of the instruction to be evaluated, determining what information will be collected, setting criteria for change or decision, collecting, analyzing, and interpreting information, and making changes. Steps in collecting information are to determine sources of information and techniques for data collection, and to select or develop instruments. Research instruments and techniques that may be used are described. Selecting criteria for teacher and/or course improvement, program evaluation, or personnel evaluation are considered. Brief comments are presented regarding methods for analyzing information for several types of instruments or techniques. The time and resources available to actually implement changes and to plan in detail what will be done with the evaluation results are reviewed. (SW)

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MCGILL EVALUATION SYSTEM
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McGill Evaluation System

USER'S GUIDE

P.A. Cranton

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Centre for Teaching and Learning Services McGill University

MCGILL EVALUATION SYSTEM
USER'S GUIDE

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MCGILL EVALUATION SYSTEM USER'S GUIDE

Description

The McGill Evaluation System is a practical step-by-step procedure for university faculty who are interested in instructional evaluation. This guide will take you from the initial planning of an evaluation, through data collection, to the making of changes in a course or program. Supplemental materials and readings are contained in resource files which accompany each step, and are referred to in the guide. You will also be directed to other services or facilities on the campus if necessary. It is recommended that you work with a consultant from the Centre for Teaching and Learning Services (CTLS) however, the extent of his or her involvement will vary.

The procedure used in this system contains six sequential steps:

1. Describing the purpose of the evaluation.
2. Deciding the aspects of the intruction to be evaluated.
3. Determining what information will be collected.
4. Setting criteria for change or decision.
5. Collecting, analyzing and interpreting the information.
6. Making changes.

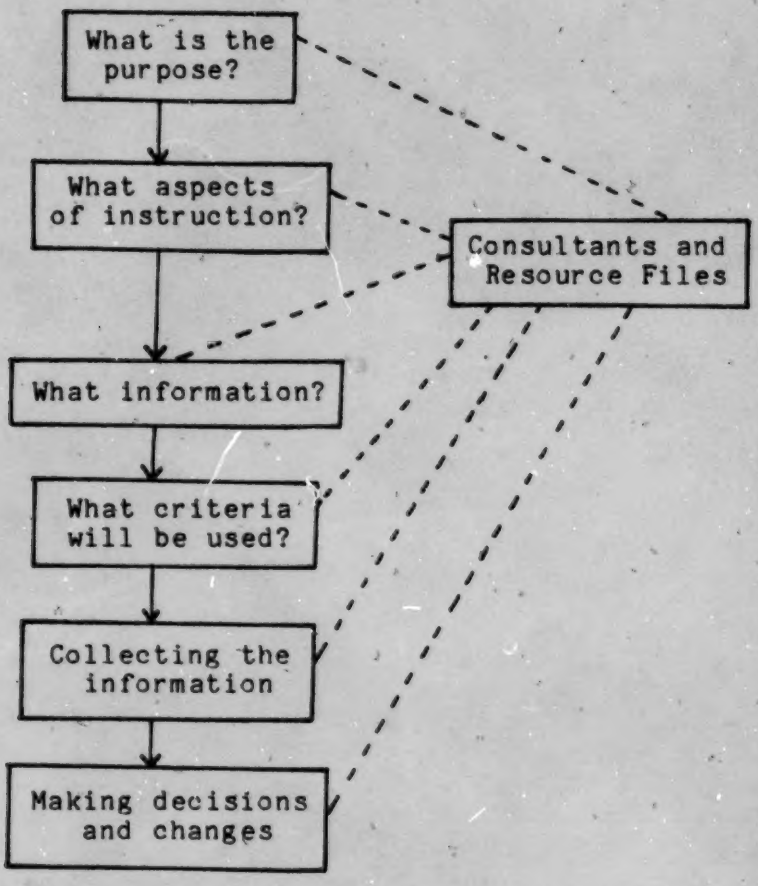
Procedural and Policy Issues

During the first two years of the implementation of the McGill Evaluation System, several issues arose regarding its use. Thrcugh discussion at CTLS, consultation with faculty members, and with other instructional development centres, consensus was reached on the following items:

1. The professor or department who undertakes an evaluation is responsible for the planning and implementation of the procedures; Centre for Teaching and Learning Services staff act as consultants rather than evaluators; that is, advice and resources are supplied whenever required, but the actual evaluation is done by the client.
2. Participation in any evaluation is completely voluntary; it is recommended that any individual being evaluated also be involved in the entire planning process.
3. Evaluation results are confidential, and are the sole property of the professor conducting the evaluation. When a department-wide evaluation is being conducted, each individual professor is responsible for the dissemination and use of his or her results. However, an agreement may be reached within a department or between a professor and a chairman specifying the distribution of evaluation results.

4. Evaluations for personnel decisions based on the Evaluations System must contain a statement from a consultant at the Centre for Teaching and Learning Services attesting to the strengths and limitations of the procedures used. The Centre accepts no responsibility for evaluations which do not conform to this policy.

Overview of the Evaluation System



For each step you will be given the following information:

1. The Task: What you will do at this step, and how it relates to the evaluation process as a whole.
2. How to Complete the Task: Activities, resources, references, materials to use, people to consult.
3. Is the Task Complete? A summary of what you should have at the end of the step.

STEP ONE

WHAT IS THE PURPOSE OF THE EVALUATION?

The Task

Many details in the evaluation procedure will vary depending on your purpose; it is important, therefore, to be as specific as possible, and to reach consensus if more than one professor is involved.

When this step is complete, you should have answered the following questions:

1. What is prompting the evaluation?
2. Will the evaluation be primarily for improvement or for personnel decisions?
3. What types of changes are you considering, or what decisions do you need to make?
4. What will be evaluated (teaching skills, course content, course organization, program organization)?

It is recommended that you record your goals or purposes in order to refer back to them at later stages of the evaluation.

How to Complete the Task

Question 1: What is prompting the evaluation?

The answer to this question should be concrete and straightforward.

Example Answers

1. Students in the third year of the program are not adequately prepared.
2. The failure rate among students is high.
3. I am applying for promotion next year.
4. I want to see what improvements I can make in my teaching.

Question 2: Will the evaluation be primarily for improvement or personnel decisions?

Although evaluation for improvement and for personnel decision-making overlap in many instances, there will be some variation in procedure, e.g., personnel decision-making may require more comprehensive and more general information; evaluation for improvement could be an in-depth examination of one aspect of a course. It is necessary, therefore, to specify the primary purpose of the evaluation before planning of the procedures begins. Other "administrative" decisions such as changes in the content of a program can be viewed as having the overall purpose of improvement and therefore will be categorized as "evaluation for improvement."

Articles in Resource File 1A contain further thoughts on the improvement-administrative distinction.

Baker, R.L. Curriculum evaluation. Review of Educational Research, 1959, 39(3)

Distinguishes between formative (improvement-oriented) and summative (decision-oriented) evaluation.

Cronbach, L.J. Evaluation for course improvement. Teacher's College Record, 1963, 64, 672-683.

Grasha, T. Principles and models for assessing faculty performance: a monograph. Cincinnati: Faculty Research Center, University of Cincinnati, 1972. (File 2C)

This article presents different models of evaluation with suggestions for implementation.

Roid, G.H. Systems design for course evaluation. Paper presented at the annual meeting of the American Educational Research Association, Chicago, April, 1972.

Pages 1-8 provide a good general introduction to evaluation.

Question 3: What types of changes are you considering or what decisions do you need to make?

The most difficult aspect of this question is to focus or direct; i.e., to move away from generalities such as "We want to improve the program."

The answer should be specific enough to allow you to judge the feasibility of your planned changes in terms of time and resources. Will you, for example, enroll in a 40-hour course to improve your teaching, or will you spend 2 weeks during the summer reorganizing your course?

Example Answers

1. A committee will be established to rewrite the objectives and the course outline for the introductory course.

2. Professor X will read a number of articles on teaching methods and enroll in a self-instructional course on teaching skills.

3. A new format will be tried for the course (e.g., computer-assisted instruction, or student-led seminars).

Many educators have examined the process of change at the university level--the factors that make a change acceptable, and how to evaluate the effect of the change. You may find these analyses useful in judging the types of changes that are feasible for your own situation. File 1B contains:

Corprew, J.C., & Davis, H.J. An organizational development effort to improve instruction at a university, with suggestions for successful implementation. Educational Technology, 1975, 15, 41-44.

Gaff, S.S. Institutional change. In S.S. Gaff (Ed.), Resource Notebook. Washington: Project on Institutional Renewal through the Improvement of Teaching, 1976.

The author provides an overview of institutional change along with an annotated bibliography of recent writings in the area.

Sikes, W.W., Schlesigner, L.E., & Seashore, C.N. Renewing higher education from within. San Francisco: Jossey-Bass, 1974, 38-52.

This chapter from what the authors describe as "a manual for change agents" explores some of the factors which inhibit change on campus.

Resource materials that describe teaching and course improvement techniques may assist you in determining what types of changes are feasible for you to make. In Resource File 1C you will find:

The educational development group: IDSP. Learning and Development, 1976, 7, No. 4.

This newsletter describes a service available at McGill which enables attention to be focussed on in-class teaching performance through videotaping and questionnaires completed by professor and students.

Gaff, J.G. New approaches to improve teaching. In W. Ferris (Ed.), Learner-Centered Reform. San Francisco: Jossey-Bass, 1975, 90-97.

Goldschmid, B., & Goldschmid, M.L. Modular instruction: principles and applications in higher education. Learning and Development, 1972, 3, No. 8.

Goldschmid, B., & Goldschmid, M.L. Individualizing instruction at the college and university level. Learning and Development, 1973, 4, No. 7.

Roid, G.H. Research on university teaching: a perspective. Learning and Development, 1970, 2, No. 1.

If you are working with a group, or consulting colleagues, the answer to this question will likely be obtained through discussion. Some guidelines for productive group discussion are:

1. Circulate a copy of the questions to be discussed and answered. Provide "model" answers as a guideline if possible.
2. Encourage faculty members to write answers to the questions in advance. Some of these may even be circulated prior to discussion.
3. During discussion, use time limits as a means of encouraging "to the point" discussion. Be prepared to be flexible, however, if your time limits do not appear to be realistic.
4. Have a discussion leader or chairman who moves toward specific answers by asking one more question of the "what" or "how" type (e.g, "What do we want students to know?," "How can we change course XYZ?").

5. Examples are particularly useful in focussing discussion. The discussion leader can ask for specific examples when the conversation is tending toward generalities.

6. Have a discussion leader who periodically summarizes the discussion. If the group disagrees with the summary, further discussion could clarify the issue; if the group agrees, discussion can proceed.

Resource File 1D contains the following relevant article:

Brilhart, J.K. Effective group discussion (2nd ed.), Dubuque, Iowa: Wm. C. Brown Co., 1974, 95-149.

These two chapters provide a detailed guide to the classroom; the general principles, however, are adaptable to any situation.

There are a number of roles that the consulant can play in the completion of the first step. (1) He or she can act as discussion leader, assisting in the directing or focussing of your answers to the key questions. (2) You can ask a consultant for feedback on the answers you have--are they specific enough? (3) If you are unable to judge the feasibility of the size of the evaluation you plan to do, or the practicality of the changes you would like to make, a consultant can provide an estimate of the time and resources required for your plan.

Question 4: What will be evaluated?

There are at least three possible "targets" for instructional evaluation: teaching performance, course content

and organization, and program content and organization. Teaching performance consists of the skills that you use while in the classroom--lecturing ability, ability to ask and answer questions, to lead discussions, etc. It does not include the content of the course, the sequence in which topics are covered, the assignments that students are given, or readings. The distinction between the professor as an instructor and the content of the course will not be complete, especially when the instructor is solely responsible for designing the course. You may wish to evaluate each separately, or you may not wish to make the distinction at all.

Evaluation "Targets"

- teaching performance
- course content and organization
- program content and organization

If you are examining a course or program, briefly list the goals of that course or program (e.g., to give students an overview of American history, to train radio-therapists).

You may wish to consult one of the following articles dealing with defining your course goals or objectives (File 1E).

Cohen, A. Objectives for college courses. Beverley Hills, Calif.: Glencoe Press, 1970, 9-64, 73-87.

Geis, G.L. Why write and use behavioral objectives? Learning and Development, 1972, 4(1).

Hess, K.H. The role of objectives and the teaching of composition. College Composition and Communication, 1975, 26, 274-278.

Pascal, C.E. Towards meaningful educational objectives. Learning and Development, 1969, 1(3).

Is the Task Complete?

At the completion of Step One you should have written answers to each of the four questions dealing with the purpose of the evaluation.

1. What is prompting the evaluation?
2. Will the evaluation be primarily for improvement or for personnel decisions?
3. What types of changes are you considering or what decisions do you need to make?
4. What will be evaluated?

Each answer should be as specific as possible and should be the consensus when more than one individual is participating in the evaluation.

STEP TWO

WHAT ASPECTS OF INSTRUCTION WILL BE EVALUATED?

The Task

You have now clarified the purpose of your evaluation, including a general statement of what you intend to evaluate. It is necessary to become more specific in your planning, and to define the particular aspects of instruction that you are interested in.

If you have said, for example, that you are evaluating teaching performance, you can specify whether you are interested in the teacher as a lecturer, discussion leader, etc. Essentially, you are establishing priorities (e.g., it is important in the department that professors be effective seminar leaders). This further specification of what you are going to evaluate will enable you to do a more direct and efficient evaluation (so as not to be asking questions about things that are not important).

In the following sections are checklists which are intended as guidelines for the specification of the aspects of instruction that interest you. They are neither exhaustive nor authorative lists; feel free to add to or modify them. At the conclusion of Step Two, you should have completed one or more of the checklists or generated your own list.

If you are primarily interested in the evaluation of teaching performance, continue on this page.

If you are primarily interested in the evaluation of a course, turn to page 20.

If you are evaluating both teaching performance and course content, continue on this page.

If you are evaluating a program, turn to page 26.

Evaluation of Teaching Performance

How to Complete the Task

Teaching includes a variety of abilities or skills--the university instructor is often, for example, a lecturer, a discussion leader, and an evaluator of student learning. In order to assess your effectiveness as an instructor, it is necessary to examine each of the skills that are relevant to your teaching situation. If your goal is the improvement of your teaching, you will want to find those particular skills which need improvement and concentrate on them; if you are making a personnel decision, you will want to uncover both strengths and weaknesses in your teaching and plan changes for the weak areas.

Research on university teaching has attempted to identify the underlying components of effective teaching. Most investigations have been based on student ratings: factor analyses look for groupings in questionnaire items (items which are consistently rated in the same way are grouped together). This research has led to the identification of four major factors:

1. Skill, the ability to put material across in an interesting, clear and stimulating way.

2. Rapport, the ability to establish and maintain empathy with, concern for, and interaction with the students.

3. Structure, the tendency to have and follow a definite course outline or schedule.

4. Difficulty, the tendency to demand a great deal from students.

In addition, it may be necessary to further separate teaching ability into either more specific skills or roles. To this end, two forms are given on the following pages. The first list contains various roles that an instructor may play. The second list was developed as a part of a diagnostic and training program at the University of Massachusetts (Clinic to Improve University Teaching). It emphasizes classroom behavior, and is improvement-oriented.

If you are interested in adding to the lists, or creating your own list, you may wish to consult the following articles which discuss the components of teaching. File 2A contains:

Donald, J.G., & Penney, M. Instructional Analysis Kit. Centre for Learning and Development, McGill University, 1977.

Donald and Penney outline twenty-two elements of the instructional process, under the headings of: (1) Course planning, (2) Course Content, (3) Instructional Procedures, (4) Learning Materials, and (5) Evaluation of Learning. For each elements, articles and books containing further information are given.

Eble, K.E. The recognition and evaluation of teaching. Washington, D.C.: American Association of University Professors, Project to Improve College Teaching, 1970, 98-99.

Eble presents a checklist of effective teaching characteristics as perceived by students and faculty.

Hildebrand, M., Wilson, R.C., & Dienst, E.R. Evaluating university teaching. Berkeley, Calif.: Center for Research and Development in Higher Education, 1971.

Issacson, R.L., McKeachie, W.J., Milholland, J.E., Lin, Y.G., Hofeller, M., Baerwaldt, J.E., & Zinn, K.L. Dimensions of student evaluations of teaching. Journal of Educational Psychology, 1964, 44, 344-351.

Using student rating results, six factors of student evaluations of teaching were identified: skill, overload, structure, feedback, group interaction, and student-teacher rapport.

Form #1: Teaching Roles

Check the items which describe the teaching roles relevant to your situation. Add any items that are not included.

_____ Lecturer

_____ Discussion leader

_____ Adviser for student research or projects

_____ Adviser for independent reading

_____ Demonstrator (e.g., laboratory courses)

_____ Evaluator of student learning

_____ Course manager (e.g., modular or CAI courses)

_____ Student counsellor

_____ Materials developer

_____ Team teacher

_____ Tutorial leader

_____ Model

Other roles?

_____

_____

_____

_____

Form #2: Teaching Skills

_____ Establishing a learning set (preparing students to learn)

_____ Logical organization (arranging course content)

_____ Pacing

_____ Elaboration (clarifying or developing an idea or topic)

_____ Expression (e.g., speaking ability)

_____ Asking questions

_____ Responding to questions

_____ Facilitating student participation

_____ Closure (integrating points in a lesson)

_____ Evaluation of student learning

_____ Selecting the appropriate level of challenge

_____ Using a variety of teaching methods and materials

_____ Creativity

_____ Management

_____ Flexibility and individualization

_____ Interpersonal relations

_____ Creating a learning environment

_____ Stimulating enthusiasm

_____ Establishing a frame of reference (perspective)

_____ Identifying and clarifying values

Other skills?

_____

_____

_____

If the roles or functions vary from one course to another, or among individual faculty members complete a separate list for each variation.

Discuss the lists with all involved faculty; you do not need consensus, however, as separate lists may be used for individuals.

Is the Task Complete?

When you have completed Step Two for the evaluation of teaching, you should have:

1. One or more completed checklists that specify the teaching roles or the teaching skills relevant for your course(s) or program.

or

2. One or more lists you have written that specify unique teaching roles or skills for your course(s) or program.

You have answered the question from Step One (What is being evaluated?) in more detail by specifying the particular aspects of teaching you are interested in. This specification will lead you to the selection of sources of information and techniques for collecting information that are most appropriate for your situation.

Please turn to page 31 for Step Three, or continue to the next page if you are also evaluating the course.

Course Evaluation

How to Complete the Task

Course evaluation has traditionally included teaching skill, without an attempt to separate the instructor's performance from the content or organization of the course. Dependent on the purpose of your evaluation you may wish to examine a course independently of a professor's skill (for example, in order to decide whether a course should be deleted from a program), or you may want to evaluate both teaching performance and course content. In the latter case, it is suggested that you also complete the previous section of Step Two.

In designing a course evaluation, there are three questions to be answered at this stage. (1) What type of course are you evaluating? (2) What are the goals of the course? (3) What aspects of the course do you want to examine? Answers to each of these questions will assist in determining the type of information you need to collect.

Question 1: What type of course are you evaluating?

The form on the following page includes common types of courses at the university level.

Form #3: Course Types

Check the item or items which best describe your course.

_____ Survey course (introductory level)

_____ Survey course (advanced level)

_____ Seminar

_____ Reading course (independent study)

_____ Tutorial

_____ Laboratory

_____ Practicum or internship

_____ Lecture/discussion (non-survey)

_____ Clinical course

_____ Other? Description: _____

_____

_____

Other characteristics which are relevant to the type of course are listed below.

Number of students enrolled in the course _____

Number of sections of the course _____

Number of professors teaching the course _____

Number of teaching assistants involved _____

Level (undergraduate, graduate) and year _____

Required or elective course _____

Question 2: What are the goals of the course?

In order to assess the effectiveness of your course, it is necessary to have a clear statement of what the course is intended to accomplish. If you have course objectives or a detailed course outline, they will provide the required information. If neither is available, you may wish to consult one or more of the following books which discuss how to formulate course goals or objectives. File 2B contains:

Cohen, A. Objectives for college courses. Beverly Hills, Calif.: Glencoe Press, 1970, 9-64, 73-87. (See File 1E.)

Deterline, R.H., & Lenn, P.D. Coordinated instructional systems. Palo Alto, Calif.: Sound Education, Inc., 1972, 11-17.

Kibler, R.J., Cegala, D.J., Barker, L.L., & Miles, D.T. Objectives for instruction and evaluation. Boston: Allyn & Bacon, 1974, 32-64.

Mager, R.F. Preparing instructional objectives. Palo Alto, California: Fearson, 1962.

When time is limited or you feel that objectives are not suitable to your situation, you can use the questions on the following pages to describe what your course is intended to accomplish.

Form #4: Course Goals

1. Is the course a "basic skills" course? Yes____ No____

   Examples: performing calculations, problem solving, drawing techniques, grammar of a second language

   If so, list the basic skills the student will attain:

   _____

   _____

   _____

2. Does the course provide a general knowledge of an area or areas? Yes____ No____

   Examples: abnormal psychology, European literature, information retrieval systems

   If so, list the area(s): _____

   _____

   _____

3. Does the course emphasize an in-depth knowledge of a topic or topics? Yes____ No____

   List the topic(s):

   _____

   _____

   _____

Is it theoretical knowledge? _____

Is it applied knowledge? _____

Does it include knowledge of research? _____

4. Does the course emphasize research skills in an area or areas? Yes____ No____

If so, what areas(s): _____

_____

Does it involve students doing their own research? _____

Does it involve criticizing research in the area? _____

Does it include a knowledge of current research? _____

5. Does the course emphasize the practical application of a body of knowledge? Yes____ No____

Examples: student teaching, psychological testing, social work, geological field work

What is the application?

_____

_____

_____

_____

Question 3: What aspects of the course do you want to examine?

Depending on the purpose of the evaluation, you may want to emphasize certain aspects of the course, e.g., for a required-optional decision, you may be most interested in whether or not the course content is an integral part of the program. The components of the course that you choose to emphasize will determine the type of information that you collect.

Form #5: Course Components

_____ Content (topics included, comprehensiveness, etc.)

_____ Organization (structure or sequence of topics)

_____ Textbooks, readings

_____ Assignments, projects

_____ Evaluation procedures

_____ Audio-visual aids (films, tapes, TV)

_____ Outside resources (guest speakers, clinical facilities, schools)

_____ Internal resources (labs, computer facilities, classroom)

_____ Special methods (modules, computer-assisted instruction, student-led sessions, field trips)

Other:

_____

_____

_____

_____

Is the Task Complete?

When you have completed Step Two for the evaluation of a course, you should have:

1. A completed form indicating the type of course you are evaluating.
2. Either a list of course objectives, a detailed course outline or a completed form indicating the course's intended outcomes.
3. A list of the components of the course that you will be emphasizing in the evaluation.

Program Evaluation

How to Complete the Task

In order to evaluate the effectiveness of an academic program, it is necessary to specify what the program is intended to accomplish, and to consider what aspects of the program will be examined. The two questions to be answered at this stage are: (1) What are the program goals? and (2) What aspects of the program will be evaluated?

Question 1: What are the program goals?

If you have developed a list of program goals it will provide the answer to this question. You may want to check your list with the list of questions on page 28 to ensure that you have all the relevant information.

If you do not have a statement of program goals, you may wish to consult one of the following articles or books which could be used as a guideline in specifying your goals. Resource File 2C contains:

Grasha, T. Principls and models for assessing faculty performance: A monograph. Faculty Research Center, Univ. of Cincinnati, Ohio, 1972.

This is an excellent paper relevant to all aspects of the evaluation process. The "Goal method approach to assessment" described on pages 15-19 is most relevant at this point.

Mager, R.F. Goal analysis. Belmont, Calif.: Lear Seigler, Inc./Fearon Publishers, 1972, 136 pp.

The author guides you through the exercise of turning vague general goals into specific statements about the outcomes a course or program is attempting to achieve.

Pascal, C.E., & Roid, G.H. A method for generating and evaluating course or departmental objectives. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, Feb./Mar. 1973.

Pascal and Roid present an excellent guide for formulating program goals.

In your discussion of program goals, the questions given below can be used as a guideline. Again, discussion should include all faculty in the program; discussion techniques given in Step One will be useful at this point.

Program Goals: Questions to Consider

1. What general knowledge or skills would you expect a student who completed the program to have?

   Examples: be able to solve problems in advanced calculus, have a knowledge of modern Russian novels, be able to manage the accounting system in a business organization.

2. What types of careers do graduating students tend to enter into?

3. Is the program emphasis theoretical or practical, or some combination of theory and practice?

Question 2: What aspects of the program will be evaluated?

Depending on the purpose of the evalution, you will probably want to emphasize different aspects of the program. For example, if you are making decisions concerning the addition and deletion of courses, you will want to examine the role of the existing courses in the program, and teaching performance will not be relevant.

Several components of a typical program are listed below. Consider which of these are related to your purpose; add items if necessary.

Form #6: Components of a Program

Program Content

_____ Content of individual courses

_____ Structure and format of individual courses

_____ Relationship among courses in the program

_____ Relevance of courses to program goals

Program Methodology

_____ Teaching performance of faculty

_____ Methods used (seminars, labs, independent study, etc.)

Program Context

_____ Administrative structure

_____ Physical facilities

_____ Budget (sources, administrative procedures)

Personnel

_____ Use of teaching assistants

_____ Staff roles, teaching load

Other:

_____

_____

_____

_____

If your evaluation will include the content or structure of individual courses, turn back to page 20 and complete the section on course evaluation. You will need to consider each course being evaluated separately. Also, if you intend to examine the teaching performance of faculty members, turn back to page 14. Some teaching skills or roles may be perceived as relevant for all professors in the program. There will be variation, however, and lists should be prepared individually. Extra copies of both forms are available from the Centre for Teaching and Learning Services.

Is the Task Complete?

When you have completed Step Two for program evaluation, you should have:

1. A list of program goals.
2. A list of the components of the program that you wish to evaluate.
3. If your evaluation includes individual courses and/or teaching performance in the program, you should also have completed the appropriate sections.

STEP THREE

WHAT INFORMATION WILL BE COLLECTED?

The Task

In Steps One and Two you specified and described the purpose and the target of the evaluation. Step Three is concerned with the type of information to be collected.

There are three parts to this step: (1) deciding the sources of information (e.g., students, colleagues, course materials); (2) deciding what instruments and techniques will be used (e.g., interviews, questionnaires, observations), and (3) selecting or developing the necessary instruments. This is both a complex and somewhat arbitrary step. Many possibilities do exist, and there is no one answer for all situations.

How to Complete the Task

Part One: Sources of Information

The selection of appropriate sources of information will depend on the purpose of the evaluation, what you are evaluating, the discipline you are in, and the time and resources available for the evaluation. The chart on page 34 suggests some possible sources of information.

Research on instructional evaluation has compared various sources of information, and related some sources to other criteria of effective instruction. Several summary articles are available in Resource File 3A.

Aleamoni, L.M., & Yimer, M. An investigation of the relationship between colleague ratings, student ratings, research productivity, and academic rank in rating instructional effectiveness. Journal of Educational Psychology, 1973, 64, 274-277.

Colleague and student ratings were gathered for a group of 477 instructors and then compared to the instructors' research productivity and academic rank. Colleague and student ratings were not significantly related to research productivity. However, colleague ratings were significantly related to academic rank.

Bergquist, W.H., & Phillips, S.R. A handbook for faculty development. Washington, D.C.: The Council for the Advancement of Small Colleges, 1975, 45-49.

Blackburn, R.T., & Clark, M.J. Assessment of faculty performance: Some correlations between administrator, colleague, student, and self-ratings. Sociology of Education, 1975, 48, 242-256.

This paper addresses the uncertainties surrounding the evaluation of faculty work performance and reviews the conflicting studies of the two principal professional roles, teaching and research.

Centra, J.A. College teaching: Who should evaluate it? Findings, 1974, 1(1).

Centra provides a readable summary of research concerning colleagues and student ratings of instruction.

Centra, J.A. The relationship between student and alumni ratings of teachers. Education and Psychology Measurement, 1974, 34, 321-325.

Student and alumni ratings for teachers were found to correlate .75. Agreement suggests that student ratings may indeed reflect overall long-term

satisfaction with instruction.

Kulik, J.A., & McKeachie, W.J. The evaluation of teachers in higher education. In F.N. Kerlinger (Ed.) Review of research in education (Vol. 3). Itasca, Illinois: Peacock, 1975.

The authors give a recent and comprehensive review of research on student, peer, self, and administrator ratings of teaching.

Miller, R.I. Assessing teacher effectiveness. Proceedings of the International Conference on Improving University Teaching, May, 1975, Heidelberg, 28-61, 73-78.

Sagen, H.B. Student, faculty, and department chairmen ratings: Who agrees with whom? Research in Higher Education, 1974, 2, 265-272.

The study found little agreement among faculty, student, and department chairmen regarding overall effectiveness of instruction.

A Guide to Selecting Sources of Information*

Purpose	Target	Discipline	Sources
Improvement	Course		Colleagues Students Course materials Support services (library, etc.)
		Applied or Professional Course	Professional associations Alumni
	Teaching		Students Colleagues Alumni
	Program		Colleagues Students Administrators Materials Graduate students (TA's)
		Applied or Professional Training Program	Professional associations Government agencies Community groups
			Outside evaluators Alumni Drop-out students
Personnel Decisions			Colleagues Students Administrators Course materials
		Applied discipline	Professional associations Community groups
			Outside evaluator Alumni

*The type of information which each source may provide is summarized on page 37.

You may also wish to consult some of the more specific articles in File 3B.

Centra, J.A. Strategies for improving college teaching. ERIC Clearinghouse on Higher Education, Report #8. Washington, D.C.: American Association for Higher Education, 1972.

Centra, J.A. The student as godfather? The impact of student ratings on academia. Educational Researcher, 1974, 2(10), 4-8.

Centra, J.A. Student ratings of instruction and their relationship to student learning. American Educational Research Journal, 1977, 14(1), 17-24.

Gage, N.L. Student ratings of college teaching: their justification and proper use. In D.W. Allen et al. (Eds.) Reform, renewal, reward. Amherst, Mass.: University of Mass., 1975.

Menges, R.J. The new reporters: students rate instruction. Teaching News and Notes (Univ. of Kentucky, Office of Instructional Resources), 1977, 3(3), 3-8.

Murray, H.G. Limitations of students ratings of college teaching. CAUT Bulletin, April 1977, 28.

Although the selection of appropriate sources of information is complex, some general guidelines can be given. These guidelines are based on both practical experience and research results.

1. Students should be included as a source of information, when possible, regarding both their learning and their attitude toward the intstruction.
2. It is advisable to use more than one source of information as a "cross-check." Information obtained from one source (e.g., students) may be influenced by a number of circumstances (e.g., the content of one particular lecture or exam). Use of more than one source will allow you to

check for the influence of unusual circumstances. For personnel decisions, it is essential that more than one source be included.

3. Course evaluations should include course materials (outlines, exams, assignments), as well as students as sources of information.

4. The source of information may determine the outcome of the evaluation. Biases, both positive and negative, can be built into the evaluation through the selection of the sources. It is suggested that you read the relevant information from the resource files and have your consultant view the proposed sources to assist you in identifying potential biases.

5. Different sources are able to provide different types of information; for example, you cannot expect students to be content experts, and colleagues are not likely to be able to judge your rapport with students. The table on page 37 summarizes some possible types of information that you can expect from various sources.

Source	Possible Information
Colleagues	Course content, textbooks, resources
Students	Ratings of effectiveness of various teaching skills
	Difficulty of course
	Textbook, exams, assignments
	Clarity of course objectives
	Achievement
Administrators	Relevance of course or program goals to the profession
	Extent to which graduated students are prepared for profession
Alumni	Extent to which course or program prepared them for career
Government agencies	Curriculum requirements Professional requirements
Community agencies	Employment trends, type of training required
Faculty from other universities	Course or program content or organization
University services (e.g., library, computer centre)	Frequency of student use, preferred titles & programs, etc.

Form #7: Sources of Information

Check the sources that you will include in the evaluation. Add sources if necessary.

_____ Chairman

_____ Self

_____ Colleagues

_____ Students

_____ Administrators

_____ Professional evaluators

_____ Alumni

_____ Government agencies

_____ Community agencies

_____ Research/teaching assistants

_____ Course/program materials

_____ Drop-out students

_____ Faculty from other universities

_____ University support services (library, drop-in centres, computer centre)

Other:

_____

_____

_____

_____

Part Two: Techniques for Collecting Information

Several techniques for collecting evaluation information are described below.

1. Interviews are face-to-face, individual question and answer sessions. They may be preplanned and fairly structured or completely open-ended and flexible. They are most appropriate for obtaining information that cannot be easily quantified, or for uncovering unexpected feelings and reactions.
2. Observations involve watching the instruction in progress. Specific behaviors may be observed and recorded. The emphasis is often on the occurrence of the behavior; however, ratings or judgements may be made. Observers must be trained and some systematic procedure used for recording the observations.
3. Comments may be formal or informal records. Individuals or groups can be asked to record their feelings, reactions and attitudes to various aspects of the course, program or teaching. Comments may be collected during discussions, meetings or classes. This technique is useful for detecting side effects or unexpected reactions.
4. Questionnaires may include ratings of instruction or open-ended questions. When large numbers of people are involved, questionnaires are a quick, practical, and generally reliable means of collecting certain kinds of information. However, questionnaires do, as all other

techniques, have limitations. It is always advisable to use them in conjunction with another method. Questionnaires give you ratings of instruction: they provide information on attitudes toward, or judgements about the teaching or course. Extensive research has been done on the use of questionnaires: variables that influence ratings, relationships with student learning, the ways in which items can be grouped, and reliability over time.

Reviews of this research and a few "classic" articles can be found in Resource File 3C.

Centra, J.A. Student ratings of instruction and their relationship to student learning. American Educational Research Journal, 1977, 14, 17-24.

This study randomly assigned students to sections of a college course, and investigated the relationship between teacher-produced achievement and student ratings. A moderately positive relationship was found.

Costin, F., Greenough, W., & Menges, R. Student ratings of college teachers: Reliability, validity, and usefulness. Review of Educational Research, 1971, 41, 511-535.

Feldman, K.A. Consistency and variability among college students in rating their teachers and courses: A review and analysis. Research in Higher Education, 1977, 6, 223-274.

Feldman, K.A. Couse characteristics and college students' ratings of their teachers--what we know and what we don't. Research in Higher Education, 1978, 9, 199-242.

Kulik, J.A., & McKeachie, W.J. The evaluation of teachers in higher education. In F. Kerlinger (Ed.), Review of Research in Education, 1975, 3(3), 210-240.

5. Checklists are lists of behaviors to be observed, or choices to be made. They are efficient for recording occurrences of characteristics or behaviors, but do not usually provide an opportunity for ratings or judgements.
6. Tests of student learning are usually a part of the course, and may be used as one indication of course effectiveness. However, many variables influence student learning; it cannot be used as the sole criterion of teaching effectiveness.
7. Content and task analysis are techniques for analyzing a course outline, exam or lecture notes. They will give you information about the content or structure of a course. Task analysis emphasizes the type of learning that is expected of the student and the appropriate sequencing of instruction.
8. Videotapes and tape recordings provide a lasting record of observations. No additional information is obtained, but the tapes can be reviewed and carefully analyzed.

When is a particular technique most appropriate? Your choice will depend on a number of variables: the type of information required (for different purposes); time and resources available; and the sources of information. General guidelines for selecting the technique are summarized in the chart on pages 44 and 45. Resources from which this information was summarized and elaboration on some of the techniques are contained in Resource File 3D.

Cronbach, L.J. Evaluation for course improvement. Teacher's College Record, 1963, 64, (Pages 8-21 deal with methods.)

Donald, J.G. The evaluation of learning. Learning and Development, 1976, 8, No. 2.

Roid, G.H. Towards a system of course evaluation. Learning and Development, 1971, 2, (2).

Roid, G.H. Learning about ratings vs. rating learning: some questions about questionnaires in course evaluation. Learning and Development, 1971, 3, No. 4.

Smock, R., & Crooks, T. Diagnosis and remediation of instructional problems without the use of standardized instruments. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, 1973.

Some additional ideas can be found in pp. 12-15 of Tony Grasha's "Principles and models for assessing faculty performance." Copies of this article are in Resource Files 1C and 2D.

For each source of information (colleagues, students, etc.) you have selected, record the technique (interview, observation, etc.) to be used in collecting that information.

Part Three: Selecting or Developing Instruments

The instruments used in the evaluation determine, to a large extent, the validity of the results. Great care must be taken to ensure clear, unambiguous and objective questions. Choice of wording or response categories can influence results either positively or negatively.

Evaluators and researchers have developed and tested many instruments. Several of these are available in the resource files. When possible, it is recommended that such instruments, or questions from them, be used. If items must be written for a unique situation, have your consultant review them.

Summary: Selecting Techniques for Collecting Information

Techniques	When to Use?	For which Source?	Time Required	Resources Needed	Examples of Use
Interviews	to obtain detailed indepth information on a small number of topics--to answer "why" rather than "what"	faculty students administrators	large time investment for gathering and analysis	inverviewer(s)	course evaluation (analysis of course relevance to student career plans)
Observations	to obtain detailed information on specific behaviors/skills/performance	faculty	large time investment for gathering	trained observers	teaching evaluation (to determine whether questions are used appropriately)
Comments	to obtain unexpected side-effect information	all sources	moderate time investment for analysis	none	evaluation of an innovation, e.g., modules
Questionnaires	to gather information on attitudes, reactions, perceptions, from large numbers of people	all sources	moderate time for preparation	printing ready made items (optional) computer analysis (optional)	teaching evaluation (to determine students' perceptions of in-class teaching performance)

Summary: Selecting Techniques for Collecting Information (continued)

Technique	When to Use?	For which Source?	Time Required	Resources Needed	Examples of Use
Checklists	to determine the presence of characteristics, components, behaviors	all sources	short time commitment	none	course evaluation (to examine the comprehensiveness of a course outline)
Achievement tests	to assess student learning	students	moderate	test construction computer analysis (optional)	course evaluation (to see if course objectives are being mastered)
Content and Task analysis	to examine course materials	faculty subject-matter experts	moderate time investment	procedures for completing an analysis	course evaluation (an analysis of a lab manual developed for the course)
Videotapes and tape recordings	detailed information on specific behaviors/skills/performance (where a lasting record is needed for later analysis)	faculty	large time investment	equipment trained observers equipment operators	teaching evaluation (to analyze ability to facilitate discussion)

Good instruments are important in any evaluation. Extra care should be taken (e.g., the use of more than one instrument, having colleagues review the instruments) when personnel decisions are being made.

Turn to the sections dealing with the techniques you are using:

Technique	Page
Achievement Tests (student learning)	46
Checklists	47
Comments/Reviews	48
Content or Task Analysis	49
Interviews	50
Observations	51
Questionnaires	53
Videotapes	55

Achievement Tests (measures of student learning)

Measures of student learning are usually a part of the course. In an evaluation, you will most likely be concerned with overall results of a course, although it is possible (for teaching or course improvement) that you would want to examine student achivement on a specific aspect of the course.

The following resources give practical advice on the development of achievement tests. Although they are not contained in the Resource Files, they are available from your consultant.

Cranton, P.A. Constructing tests. Centre for Learning and Development, 1977. See Teaching and Learning Modules, No. 6.

This module goes through the steps involved in choosing, constructing and evaluating different types of tests.

Donald, J. Objective tests. Office of Educational Development, McGill University, 1977.

This pamphlet gives guidelines for the construction of multiple choice, true-false, matching and short answer tests.

Green, J.A. Teacher Made Tests (2nd Ed.). New York: Harper & Row, 1975.

Green discusses different types of tests and gives guidelines on how to construct each. The book is intended for public school teachers but can easily be applied to the university level.

Checklists

Since checklists are usually specific to the situation, it will likely be necessary to construct your own. Some guidelines are given below and some examples are available in Resource File 3E.

1. Items should be short, clear and unambiguous.
2. Items should contain only one behavior or example of teaching performance.
3. Items should be objective, answerable in a "yes-no", "exist-doesn't exist" manner.
4. With long or complex checklists, it is useful to organize the items into categories or a sequence to facilitate use.

Comments and Reviews

Using comments or reviews for gathering data involves collecting extended verbal or written responses to either specific or general questions. Gathering such data is relatively easy, but interpreting the results is a challenging task.

Several approaches are possible:

1. Ask for specific, written, anonymous reviews of a particular aspect of a course or the teaching performance.
2. Ask structured, unbiased questions on a written form (similar to a "written interview").

The more structure that is imposed on comments or reviews used in an evaluation, the easier the analysis will be. However, useful information can be obtained by accepting or soliciting completely open comments.

Some general guidelines are:

1. Be flexible--accept all information that is relevant to your evaluation.
2. Be responsive and open to unsolicited comments.
3. If you use a structured format, be clear, specific and objective in your questions.

Resource File 3F contains information on how to collect comments and reviews and some guidelines on how to interpret this information:

Bogdan, R., & Taylor, S. Introduction to qualitative research methods. New York: John Wiley & Sons, 1975, 82-93, 114-121.

The authors provide guidelines for the use and analysis of comments.

Sherman, T.M., & Taylor, S. A formative approach to student evaluation of instruction. Educational Technology, January 1975, 34-39.

This article illustrates the use of comments in an evaluation.

Content and Task Analysis

Content analysis is the systematic description of the content of a communication (textbook, course outline, lectures, films, etc.). Categories and sub-categories are agreed upon, all topics are arranged into these categories, and the relationships among categories are examined (e.g., do some necessarily precede others in order to be understood, is there a sequential or historical order, is there a practical-theoretical continuum?).

Further information is given in Resource File 3G:

Sax, G. Empirical foundations of educational research. Englewood Cliffs, N.J.: Prentice Hall, 1968, 273-279.

Task analysis emphasizes the skills required of students, and the relationships among them. A task analysis specifies, in order, the steps the learner will be taking when he is successfully performing the task. Beginning with the final goal or objective of a segment of instruction, you ask "What skills or knowledge are required of the student before he can achieve this goal?" Repeat this question for each skill or knowledge statement until you have reached the lowest level which is included in the instruction. The list can be arranged in a hierarchical diagram. Examples and more detailed instructions are given in Resource File 3G:

Anderson, R.C., & Faust, G.W. Educational psychology, Dodd & Mead, 1974, 57-83.

Davis, R.H., Alexander, L.T., & Yelon, S.L. Learning system design. New York: McGraw Hill, 1974, 130-195.

Gagne, R.M. Learning hierarchies, Educational Psychologist, 1968, 6, 1-9.

Sax, G. Empirical foundations of educational research. Englewood Cliffs, N.J.: Prentice Hall, 1968, 273-279.

Interviews

Interviews vary considerably, depending on the information being sought and the person being interviewed. It is advisable to use a "structured" or a "semi-structured" interview format, that is, to plan the questions, or at least the areas that will be covered. If more than one person is interviewing, it is important that the content of the interviews be consistent.

Some general guidelines for planning interviews are:

1. Be specific and direct--ask what you want to know, leaving no room for interpretation.
2. Be clear--avoid "jargon" or vague phrases.
3. Be concise--people are donating time.
4. Be flexible--useful information can be obtained if people have an opportunity to express themselves freely at some point.
5. Be objective--don't "lead the witness."
6. Provide training or practice for the interviewers.
7. If possible, record interviews, or at least provide a clear form for categorizing responses.
8. If possible, have the interviews conducted by a "neutral" person.

Resources in File 3H contain further information on interviewing:

McCallon, E.L., & McGray, E. Planning and conducting interviews. Austin, Texas: Learning Concepts, 1978.

Morgan, H., & Cogger, J. The interviewer's manual. The Psychological Corporation, 1973.

Sax, G. Obtaining information from respondents: I-the interview and the questionnaire. Empirical foundations of educational research. Englewood Cliffs, N.J. Prentice Hall, 1968, 201-213.

Observations

It is essential that observations be structured: the observer must know which behaviors to look for and have an objective and consistent means of recording the observations. Techniques which are used to record observations are described below.

1. Checklists may be used (see p. 47) where specific behaviors are listed and checked off as they occur.
2. Categories of performance may be defined clearly, and observers may check the appropriate category at timed intervals during the observation.
3. Observers may actually evaluate or judge various aspects of a course or teaching style based on pre-defined criteria and using a rating scale.

Some general guidelines for the use of observations are:

1. Whatever method of observation is chosen, it is important to check the consistency of observations. Have two observers watch the same behavior for a short period of time and check the agreement of their observations.
2. If possible, have an "unbiased" or independent person observe--especially if teaching skills are being rated.
3. Use a minimum number of categories--it is difficult to remember and use a large number of categories.
4. Train your observers--let them "practice" before actually using the results of their observations.
5. Use as simple a recording form as possible, especially if observations are timed--the observer should not be concentrating on finding a place on a form, but rather on the teaching performance.

Resource File 3I contains two relevant items:

Instructional Development Service Project. Development of a Category System. McGill University, 1975.

An observation system developed at McGill University is described.

Martin, J. The development and use of classroom observation instruments. Canadian Journal of Education, 1977, 2, 43-54.

The author discusses the development and use of observation systems.

Questionnaires

Student questionnaires have been used and researched extensively; consequently, many forms are available.

Resource File 3J contains several questionnaires which can be used as they are, or adapted to suit a particular situation.

Bergquist, W., & Phillips, S.R. A handbook for faculty development. Washington, D.C.: The Council for the Advancement of Small Colleges, 1975, 52-86.

Illinois Course Evaluation Questionnaire & Manual.

Instructor self evaluation form (self-report form to accompany S.I.R. form), Educational Testing Service.

Wood, P. The description and evaluation of a college department's faculty rating system. Paper presented at the annual meeting of the American Educational Research Association, New York, April 1977.

Pohlmann, J.T. Evaluating instructional effectiveness with the instructional improvement questionnaire. Carbondale: Southern Illinois University, Counselling & Testing Centre, undated.

Copies of questionnaires from the following institutions are also available in File 3J:

Centre for Teaching and Learning Services, McGill University

Dawson College, Montreal

Michigan State University

University of Wisconsin at Green Bay

University of Illinois

University of Iowa

University of Arizona

Princeton University

University of Washington

Virginia Commonwealth University

If you are writing your own questionnaire items, several resources are available.

1. Centre for Teaching and Learning Services, Questionnaire Service, 1979. A consultant will assist you in using a computer-printed questionnaire based on the particular aspects of instruction that you have selected in Step Two.
2. Resource File 3K contains exerpts from books and articles which provide practical guidelines and examples. These resources do not deal exclusively with student questionnaires and will be most useful if you are constructing questionnaires intended for other sources of information (colleagues, professional association, etc.).

Henerson, M., Morris, L., & Fitz-gibbon, C. How to measure attitudes. Beverley Hills: Sage, 1978.

McCallon, E., & McCray, E. Designing and using questionnaires. Austin, Texas: Learning Concepts, 1975.

Sanders, J., & Cunningham, D. Formative evaluation: selecting techniques and procedures. In S. Borich, (Ed.), Evaluating educational programs and products. Educational Technology Publication, 1974.

Sax, G. Empirical foundations of educational research. Englewood Cliffs, N.J.: Prentice Hall, 1968, 214-237.

Zimbardo, P., & Ebbeson, E. Influencing attitudes and changing behavior. Reading, Mass.: Addison-Wesley, 1968, 123-128.

Videotapes

Since videotaping is a technique for recording observations, the information given in the section on observations (page 51) is relevant here.

For detailed information on the use of videotapes, contact the Teaching Improvement Specialists at 392-8320.

Is the Task Complete?

At the completion of Step Three, you will have:

1. Selected the sources of information that you will use.
2. Selected the techniques for collecting information.
3. Selected or developed any instruments or forms which will be used.

STEP FOUR

WHAT CRITERIA WILL BE USED FOR DECISION OR CHANGE?

The Task

Before the data are collected for the evaluation, it is important to consider how they will be used to make decisions or to plan changes. This step is analogous to formulating research hypotheses--if criteria are set before the information is in front of you, it will lead to more objective and systematic decisions. Admittedly, setting criteria for the evaluation of instruction is a complex and somewhat arbitrary task--many variables affect student learning, student ratings, and all other indicators of effective instruction. It is possible, however, to set standards, or a range of standards, keeping in mind that the measurement will not be precise, and that you may need to make revisions to these standards as the evaluation continues.

You may find, as you attempt to set criteria, that this process acts as a "review" of your evaluation intruments--if you cannot determine what type of responses should be obtained from a question, perhaps the question requires revision, or does not need to be asked.

The process of setting criteria varies depending on the purpose of the evaluation--for example, making an "error" is much more serious if you are making personnel decisions than if you are evaluating your own teaching in order to make improvements. Three evaluation purposes will be considered separately.

- If you are evaluating teaching performance and/or a course for improvement, continue on this page.
- If you are evaluating a program, turn to page 62.
- If you are making a personnel decision, turn to page 65.

Teaching and/or Course Improvement

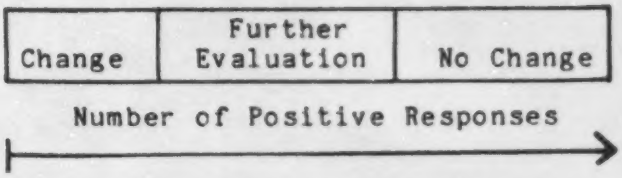
How to Complete the Task

When the decision being made is whether or not to make an improvement, the consequences of a "wrong" decision are not serious. It is probably preferable to set criteria low: at worst, this will lead you to make improvements that are not actually necessary. Available time and resources are the major considerations. A general procedure is given below.

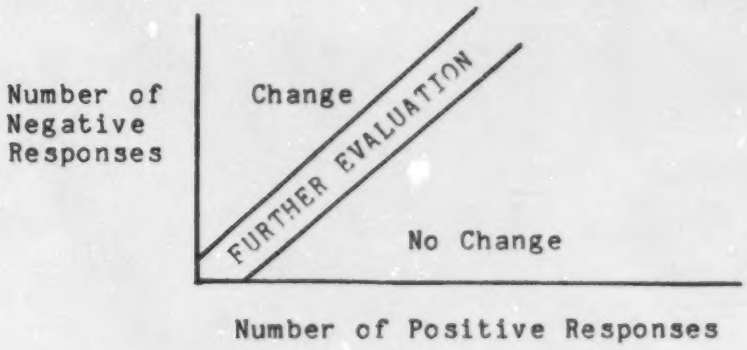
1. Using the aspects of instruction (teaching skills, course components) that you specified in Step Two along with the items or questions that you selected to measure those aspects, categorize or order them according to importance. For example, if you are teaching an applied course designed for professional training, field experience may be the most important course component; if you are teaching a small discussion-oriented class, your skill as a discussion leader may have first priority.
2. Considering the time and resources available, decide the maximum number of areas in which changes could be made. Some changes are obviously more time consuming than others (e.g., revising course materials versus speaking

more clearly): you may want to categorize the changes (e.g., two large changes are feasible, or five smaller changes).

3. Consider which sources of information are most important--if you are considering course content changes, colleagues' opinions may be most valid; however, for a particular teaching skill, students may provide the most relevant information.
4. Predict the responses that you will get and/or rate yourself.
5. Criteria may now be determined in a number of ways:
   a. Specify percentages or frequencies of responses below which you will change, e.g., if at least 50% of the students are satisfied with the sequence of topics in the course, no change will be made. This will need to be done separately for each area being evaluated and all sources of information need to be considered. Criteria will vary according to the priority of the area.
   b. If it is not possible to set specific criteria for some or all of the aspects of instruction, you may consider using a "range" for a criterion: for example, you could say, "If between 30% and 50% of the questionnaire responses are negative, students will be interviewed to obtain further information,"



or, you could say, "If the first five interviews are all negative, I'll stop interviewing and plan to make changes; if the first five interviews are all positive, I'll make no changes; if two are negative and three positive, I'll continue interviewing."



c. Specify the areas in which you will work, e.g., regardless of the level of responses, changes will be made in the lowest three areas only.

d. Discrepancies between expected ratings and obtained ratings may also be used. A large discrepancy could lead to further evaluation, or could be used to change priorities (e.g., if you thought you presented course objectives clearly, but students did not, making a change in that area may become more important).

A Note on the Potential Dangers of Over-Qualification

All of this may seem highly quantitative and you may object that the complex and often loosely-defined things with which you are dealing do not lend themselves to numbers. Indeed, quantification may seem to be a violation of the nature of the things you are trying to examine. We are sympathetic to that view and do not want to encourage trivializing the valuable things in education in order to come up with a set of numbers. What we are suggesting, though, is that the attempt to set criteria is in itself a valuable step to go through and it is an exercise which provides a picture of what is actually considered valuable. Furthermore, it will prevent evaluation from becoming simply a bureaucratic exercise. It is when you think of the consequences of the evaluation that it moves from being a game into being a respected part of the improvement process.

Is the Task Complete?

Teaching and/or Course Improvement

When Step Four is completed you will know when improvements will be made, based on each of the information-gathering techniques you have chosen. For each aspect of instruction being evaluated you will have:

1. a number of responses, a score, a frequency, etc. which will be the standard for making improvements; or
2. a number of areas in which changes will be made, regardless of "absolute" results; or

3. a range of numbers of responses or scores which will lead to a decision to make changes or a decision to continue evaluation.

Program Evaluation

How to Complete the Task

Setting criteria in a program evaluation is complicated by the number of sources of information available, the variables influencing decisions (cost, university regulations, etc.) and the number of inter-related decisions to be made. A general procedure is described below.

1. Referring back to Steps One and Two, list the decisions that are being considered.
2. Referring to Step Three, what information will be used to make each decision (e.g., which items on each questionnaire, which questions from the interview, etc.)?
3. What other considerations will affect each decision?

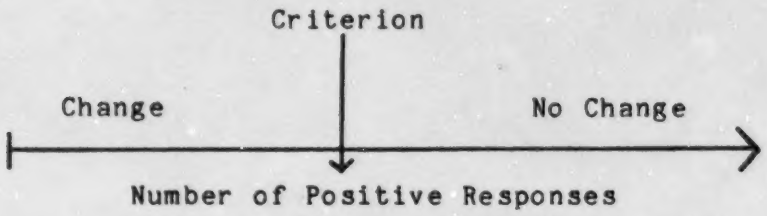
   Examples:

   - time and resources required for the change;
   - university regulations or requirements;
   - requirements of a professional association, certification board, etc.;
   - personnel available (teaching assistants, faculty workload);
   - physical facilities.

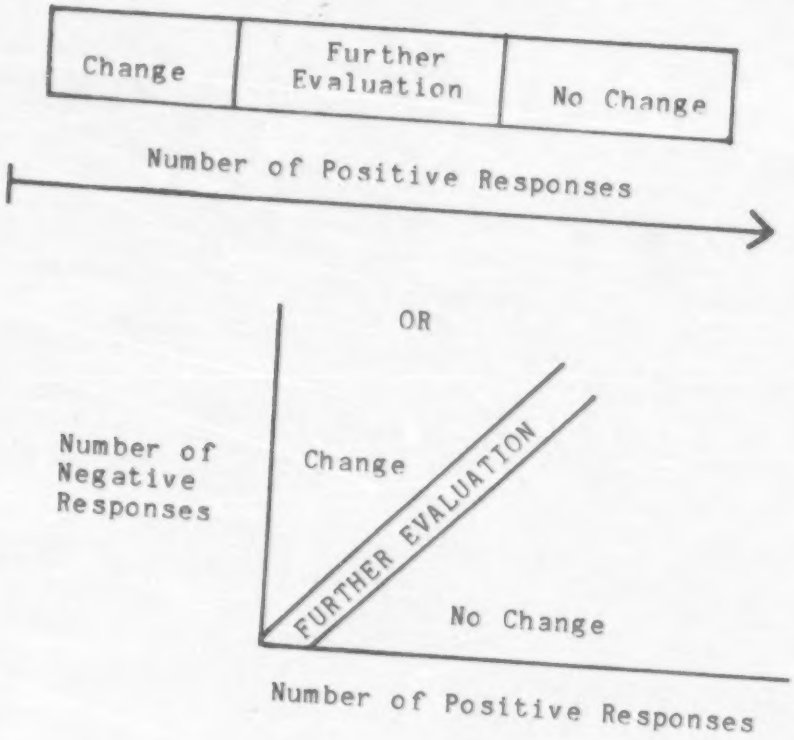
4. What are the "costs" of making a wrong decision (deciding to make a change when it isn't required, or deciding to make no change when it should be made)? Which error would be the easier one to accept? If the most acceptable error is to change when no change is necessary, set the criteria lower. If the most acceptable error is to make no change when it is really needed, set the criteria higher.

5. Criteria may be set in one of the following ways:

   a. Percentages or frequencies of positive responses on an item, group of items, or question, above or below which no change will be made.



   b. A criterion could be a range of numbers, further evaluation being required if the obtained results fall into that range.



The second illustration can be a time-saving procedure. If it is immediately obvious (say after five interviews) that results are positive or negative, collection of information ceases. If not, evaluation continues.

c. For information which is not quantifiable, you can select types of information that would be acceptable or not acceptable; you may wish to establish a minimum level of quality that is acceptable. Discussion among all involved faculty will be necessary. You may wish to involve a consultant in your discussions, or to receive comments from a consultant on the decisions you have made.

Is the Task Complete?

Program Evaluation

When Step Four is completed you will know how each decision will be made, based on each of the information-gathering techniques you have chosen. For each deicision and each technique you have either:

1. A number of responses, a score, a frequency, etc. which will be the cut-off point for your decision;
2. A range of frequencies or scores which will indicate either a decision to change or a decision to continue evaluation; or
3. A non-numerical criterion stated in terms of the type or quality of response or performance that you will accept.

Personnel Evaluation

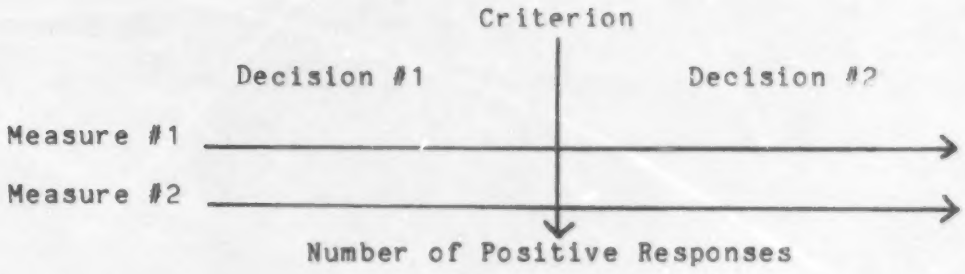
How to Complete the Task

In personnel evaluation, the decision to be made is usually straightfoward; the process of setting criteria is complicated by the psychological "cost" of making a wrong decision and the inflexibility of the decision once it is made.

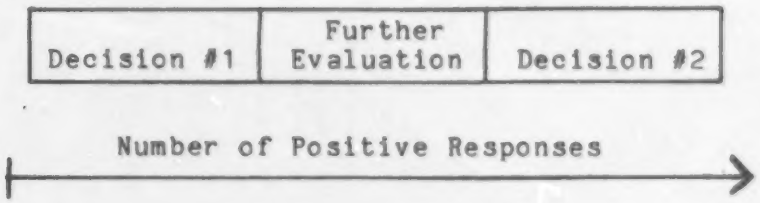
General guidelines for setting criteria are outlined below.

1. Determine priorities for the areas of instruction being evaluated. Consider setting criteria higher for the more important areas and lower for the less important areas.

2. Consider whether any variables will influence the evaluation (e.g., unusually large classes; teaching in an unfamiliar area, or teaching a new course; timing of the evaluation, etc.).
3. Whenever possible, incorporate improvement into the criteria; i.e., evaluation is repeated every semester and changes are noted, or evaluation is conducted near the beginning and end of a semester.
4. Realize that no evaluation gives completely accurate measures of the effectiveness of instruction and compensate for this as much as possible: incorporate more than one measure into each criterion; when a discrepancy occurs, evaluate further.
5. Criteria may be set in the following ways:
   a. They could consist of percentages or frequencies of positive responses for all items or questions that relate to a particular aspect of instruction. Determine the number of areas which may fall below criterion before a decision is made. Discrepancies among sources of information or among instruments should lead to further evaluation.



b. A criterion could be a range of numbers, further evaluation being required if the obtained results fall into that range.



c. For information which is not quantifiable, you can select types of information that are acceptable or not acceptable, or establish a minimum level of quality that is acceptable. You may wish to discuss this situation with a consultant.

d. You may consider relative judgement combined with more absolute criteria, e.g., if several professors are teaching similar courses (in terms of content, class size, etc.) results obtained may be compared. Criteria can be percentiles or other comparative statistics rather than absolute numbers. However, caution is advised: many variables are influencing

evaluation results, and measurements, even though quantifiable, contain a certain amount of error.

Is the Task Complete?

Personnel Evaluation

At the completion of Step Four, criteria should be set for your decision, considering the priorities of the areas being evaluated and the contribution of each source of information. Criteria may be in the form of (a) a specific cut-off point for each area with a pre-determined number of areas which must be above that cut-off point, (b) a range of numbers, leading to either a decision or further evaluation, (c) for non-quantifiable information, a decision as to what type of information is acceptable, or (d) relative information from the evaluation of more than one instructor. Whenever possible, improvement should be considered in the specification of criteria.

STEP FIVE

COLLECTING, ANALYZING, AND INTERPRETING THE INFORMATION

The Task

The evaluation plan is now complete and ready to be implemented. In Step Five, the information is gathered and summarized. Interpretation of the results follows from the criteria established in Step Four.

How to Complete the Task

Part One: Collecting the Information

Data collection is a relatively straightforward procedure, however, the results can be influenced to some extent. Research has shown that responses can be affected by such variables as the intructions given during administration of a questionnaire, anonymity of answers, timing (immediately before or after an examination), etc. The following points illustrate some of the problems that can arise when gathering information, and procedures that should help ensure accurate and valid collection (and hence interpretation) of information for the evaluation.

1. Many factors can bias the informant. Where possible, therefore, questionnaires, comment forms, etc., should be completed anonymously. In some situations, especially for course improvement, it may be useful to have signed evaluations in order to follow up on specific comments, or to relate ratings to ability,

achievement, etc. Interviews, observations, etc., should be conducted by someone who is objective and who will not be directly affected by the results of the evaluation.

2. Less obvious biases may result from some oversight like an inadequate provision of time for the thoughtful completion of forms or questionnaires. Similarly, the sample of respondents may be affected by the procedures used to gather information. For example, it is generally inadvisable to have individuals take forms home, or to mail them back--the returns will be biased sample.

3. The information gatherer (e.g., an interviewer) can also influence the results. The inexperienced interviewer, for instance, either may not elicit genuine student reaction to what was actually taught or may sway the answer by accidentally suggesting an expected response. Be sure, therefore, that any students or assistants used to make ratings, observations, etc., are adequately trained. Whenever possible, check the extent to which such assistants agree, or are consistent in their judgements.

4. Scorers or raters may also (often unconciously) reflect biases in the way they grade tests or read questionnaire responses. Using more than one scorer and checking for consistency helps to reduce the problem. It can be eliminated by the use of machine scoreable answer cards

for questionnaires whenever such a procedure is practical.

Part Two: Analyzing the Information

Methods for analyzing information vary for each instrument or technique used. Brief comments will be given for several types of instruments, and some resources will be listed. It is suggested that the consultant participate in this stage of the evaluation if any difficulties are encountered.

Achievement Tests

The analysis of achievement test results depends on the type of test being used. An essay test, for example, might be evaluated by comparison to a model answer; a multiple choice test simply involves totalling the number of correct responses.

Guidelines for scoring the various types of achievement tests can be found in Resource File 5A.

Cranton, P.A. Constructing tests. Centre for Learning and Development, McGill University, 1977. See Teaching and Learning Modules, No. 6.

Green, J.A. Teacher-made tests. New York: Harper & Row, 1975, 85-135.

Checklists

The analysis of checklist results simply involves determining the frequency of checks for each item or category of items. There may be both positive and negative items on the checklists--if so, total these items separately.

Comments/Reviews

Depending on the type of comments or reviews collected, the analysis may involve:

1. Categorizing the comments according to the issue or topic, as well as the direction (positive or negative) of the comment.
2. Putting the comments on a scale; averaging or totalling ratings.
3. Recording changes in the direction or nature of comments, if they are collected over a period of time.

Interviews

If the interview is structured or semi-structured, responses will be recorded for each question, category, or topic. The responses can be categorized or rated: they may be "positive," "negative," or "neutral;" they may be "yes," "no" or "agree," "disagree" types of responses. Responses can be listed and when they are repeated, the number of occurrences of each recorded.

More detailed information can be found in Resource File 5B.

McCallon, E.L., & McCray, E. Planning and conducting interviews. Austin, Texas: Learning concepts, 1975.

Morgan, H., & Cogger, J. The interviewer's manual. The Psychological Corporation, 1973.

Sax, G. Empirical foundations of educational research. Englewood Cliffs, N.J.: Prentice-Hall, 1968, 201-203.

Observations

Depending on the nature of your observations, the analysis may consist of:

1. Recording the frequency of occurrence of various observations.
2. Averaging ratings of judgements made for each item.

Questionnaires

Generally, questionnaire analysis consists of recording the frequencies of responses for each item. Items which are measuring the same teaching skill or course component may be averaged; percentiles may be calculated in order to compare instructors.

Information available in Resource 5C includes:

Cameron, A.M. Multiple choice examination and course evaluation, user's guide. McGill Computing Centre, August 1977.

This guide explains (with examples) McGill's system for scoring course evaluation questions.

Kulik, I.A. Student reactions to instruction. Memo to the Faculty #58. University of Michigan, Centre for Research on Learning and Teaching, October 1976.

Kulik discusses the use of questionnaire data.

Content and Task Analysis

Content and task analysis are used to determine if all the appropriate material is being covered and if it is being presented in the proper sequence. Once the analysis has been done, it is necessary to compare this ideal analysis with what actually exists and decide where changes should be made.

Part Three: Interpretation

Referring to the criteria set in Step Four, determine from the results what decisions or improvements will be made. Again, it is important to remember that the data are not "perfect": many variables have influenced the results. You may find that the criteria are unrealistic: it is acceptable to revise them if this is the case, but this must not be unilateral. The concurrence of all involved in setting the original criteria is required. It may be necessary to collect further information; your consulant will be able to discuss the situation with you and suggest possible actions.

If you are using evaluation results for a promotion or tenure decision, a useful resource (File 5D) will be:

Teaching Effectiveness Committee of the CAUT, Guide to the teaching dossier: its preparation and use, Draft Report, CAUT, 1979.

This guide contains practical suggestions for both the interpretation of information and the presentation of evaluation results in a teaching dossier.

Is the Task Complete?

At the completion of Step Four you will have collected all information, analyzed or summarized it in a way that is relevant to your criteria, and made decisions based on the criteria. Interpretation and decision-making will have included discussion among all involved individuals.

STEP SIX

MAKING CHANGES

The Task

Implementing the improvements indicated by the evaluation is an important step in the process: this is the final goal of conducting an evaluation. Unfortunately, it is also the stage where difficulties are often encountered. You've decided to improve your lecturing ability-- how does one go about it?

In Step Six you will review the time and resources available to actually implement changes, and plan, in detail what will be done with the evaluation results. Secondly, materials, articles and resources available at McGill are described to assist you in making changes.

How to Complete the Task

Part One: A Review of Time and Resources

How much time and what resources do you have to make the improvements you have planned? If you are planning a teaching improvement program, you wll be concerned mainly with your own time and the availablility of resources. If you are embarking on course revisions you may also be concerned with contributions from students, clerical assistance, or the budget for materials, equipment, etc. Program changes will likely require a detailed analysis of all resources in the department. If you are making a promotion or tenure decision, the fist part of this step may not be relevant. Otherwise, complete either Form # 8 or 9, depending

depending on your purpose.

Form #8

Review of Time and Resources for Teaching

or Course Improvement

1. How much time are you willing to contribute to teaching improvement? (hours/days per week/month)

2. How much time will be required (if any) from your students?

3. How much time (if any) will be required from your colleagues (observation of classes, discussion, etc.)?

4. What resources in terms of books or materials are available to you, or what budget do you have for books or materials?

5. What resources in terms of equipment, audiovisual aids, learning aids, etc., are available or what budget is available?

Form #9

Review of Time, Resources and Budget for Course or Program Changes

1. Faculty members who will contribute time (if any are required)	No. of hours/days
2. Students (undergraduate) who will contribute time (if required)	No. of hours/days
3. Students (graduate) who will contribute time (if required)	No. of hours/days
4. Research/teaching assistants who will contribute time (if required)	No. of hours/days
5. Clerical assistant who will contribute time (if required)	No. of hours/days

What is your budget for changes? _____

Time period _____

Equipment _____

Research/Teaching Assistants _____

Clerical/Secretarial Assistants _____

Books/Materials _____

Duplication/Printing _____

Other _____

_____

_____

_____

What resources are already available that you may be able to use (where relevant)?

Equipment _____

Books/Materials/Learning Aids _____

Library Resources _____

Laboratory Resources _____

Physical Space _____

Part Two: Resources Available for Making Improvements

A number of resources are available through McGill's Centre for Teaching and Learning Services (including the Instructional Development Service Project), and the Office of University Teaching and Learning.

1. The Centre for Teaching and Learning Services has collected an extensive set of books and articles on most aspects of instruction. The resource centre (room 407C, MacDonald-Harrington Building) is open to all McGill faculty. Your consultant will be able to guide you to the appropriate materials, or you can contact the Centre's director at 392-8320.

2. The Centre offers an individualized modular course on "Teaching and Learning." Modules may be purchased at the bookstore and used independently, or an instructor may register in the course and meet regularly with the course manager to discuss issues arising in the modules. Topics covered are:

   - Introduction to the Basic Principles of Systematic Instruction
   - Writing Learning Objectives
   - Designing Instructional Modules
   - Characteristics of Effective Instruction
   - Student Motivation: Fostering Positive Attitudes Toward Learning
   - Constructing Tests
   - Grading
   - Course Evaluation
   - The Intructor and Student Skills

3. Several general workshops and seminars are offered by the Centre each year; they are advertised in the McGill Reporter. Also, any department can request a workshop on a specific topic.

4. McGill's Instructional Development Service Project provides a procedure for improving classroom teaching performance. Instructors meet individually with a teaching improvement specialist to plan the changes. The process includes the use of student feedback on teaching performance, an analysis of course objectives or outline, classroom observation (by the teaching improvement specialist) and videotaping of instruction. Project personnel may be contacted at 392-8320.

5. McGill's Office of University Teaching and Learning offers financial assistance for some course or program changes. Further information and grant application forms are available by calling 392-8097.

6. Centre consulants are available to work with individuals, groups or departments in making teaching, course and program improvements. Your evaluation consultant may be able to act in this capacity, or refer you to another consulant.

Is the Task Complete?

Upon completion of Step Six, you will have (a) assessed the time and resouces available to you for making changes, and (b) obtained the information and/or assistance required for implementing these changes.

CONCLUSION

The evaluation of instruction is a continuous process. It does not end when you have made one or several improvements. It is important to constantly "monitor" or evaluate instruction: students' needs, interests and abilities change; course materials, class sizes, and physical facilities change. These and other variables influence the effectiveness of your instruction. It will not, of course, be necessary to constantly repeat all steps in the evaluation process. You will likely find that the planning decisions made (Steps One to Four) remain fairly constant.